

U.S. Pipelines & Logistics Contractor toolkit



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Hot work

Are controls in place to prevent flammable/combustible materials from igniting?

Has the atmosphere been tested?

Are oxygen and flammable levels acceptable?

Is there an emergency response plan in place?

How do you know?



Follow the Golden Rules of safety.
Every minute. Every hour. Every day.
Believe in zero.

WYE? – What's your exposure?

Cold stress symptoms, injuries and prevention

Anyone working in a cold environment may be at risk of cold stress. Some workers may be required to work outdoors in cold environments and for extended periods. The following frequently asked questions will help you understand what cold stress is, how it may affect your health and safety and how it can be prevented.

How cold is too cold?

What constitutes extreme cold and its effects can vary across different areas of the country. In regions that are not used to winter weather, near freezing temperatures are considered 'extreme cold'. A cold environment forces the body to work harder to maintain its temperature. Whenever temperatures drop below normal and wind speed increases, heat can leave your body more rapidly.

Wind chill is the temperature your body feels when air temperature and wind speed are combined. For example, when the air temperature is 40°F, and the wind speed is 35 mph, the effect on the exposed skin is as if the air temperature was 28°F.

Cold stress occurs by driving down the skin temperature and eventually the internal body temperature (core temperature). This may lead to serious health problems, and may cause tissue damage and possibly death.

What are the risk factors that contribute to cold stress?

- ▶ Wetness/dampness, dressing improperly and exhaustion
- ▶ Predisposing health conditions such as hypertension, hypothyroidism and diabetes
- ▶ Poor physical conditioning

How does the body react to cold conditions?

In a cold environment, most of the body's energy is used to keep the internal core temperature warm. Over time, the body will begin to shift blood flow from the extremities (hands, feet, arms and legs) and outer skin to the core (chest and abdomen). This shift allows the exposed skin and the extremities to cool rapidly and increases the risk of frostbite and hypothermia. Combine this scenario with exposure to a wet environment, and trench foot may also be a problem.

What are the most common cold induced illnesses/injuries?

- ▶ Hypothermia
- ▶ Frostbite
- ▶ Trench Foot

Safety tips for workers



1. Monitor your physical condition and that of your coworkers.
2. Dress properly for the cold.
3. Stay dry in the cold because moisture or dampness, e.g. from sweating, can increase the rate of heat loss from the body.
4. Keep extra clothing (including underwear) handy in case you get wet and need to change.
5. Drink warm sweetened fluids (no alcohol).
6. Use proper engineering controls, safe work practices and personal protective equipment (PPE) provided by your employer.

Secondary containment

A secondary containment system provides an essential line of defense in the event of a failure of the primary containment, such as a bulk storage container, a mobile or portable container, piping or oil-filled equipment. The system provides temporary containment of discharged oil until the appropriate actions are taken to abate the source of the discharge and remove oil from areas where it has accumulated to prevent it from reaching navigable waters or adjoining shorelines.

Within USPL, secondary containment methods (shown right) are used for temporary and permanent use.

Temporary dikes, berms, curbing and spill diversion ponds may be constructed after a discharge is discovered as an active containment measure (or a countermeasure) so long as they can be implemented in time to prevent the spilled oil from reaching surface waters.

Inspections:

- ▶ Prior to using any stored secondary containment material, individual should inspect material for tears, deterioration or damage.
- ▶ Monthly, temporary or permanent secondary containment items (i.e., drip pans, dikes, berms, interstitial tank, etc.) should be inspected for integrity as soon as practical accumulated water has been removed, following observation of oil/sheen.

Spill Response:

If a spill or sheen is observed in your secondary containment, follow the recommended steps below:

1. Evaluate the spill
2. Stop the spill (if safe to do so)
3. Communicate the spill
4. Remediate if necessary

Secondary containment methods

Dikes, berms or retaining walls sufficiently impervious to contain oil – Permanent engineered barriers, such as raised earth embankments or concrete containment walls, designed to hold oil. Normally used in areas with potential for large discharges, such as single or multiple aboveground storage tanks and certain piping.

Curbing – Typically consists of a permanent reinforced concrete or an asphalt apron surrounded by a concrete curb. Can be used where only small spills are expected and also used to direct spills to drains or catchment areas.

Booms – Form a continuous barrier placed as a precautionary measure to contain/collect oil. Typically used for the containment, exclusion or deflection of oil floating on water, and is usually associated with an oil spill contingency or facility response plan to address oil spills that have reached surface waters. Beach booms are designed to work in shallow or tidal areas. Sorbent-filled booms can be used for land-based spills. There are very limited applications for use of booms for land-based containment of discharged oil.

Sorbent materials – Insoluble materials or mixtures of materials (packaged in forms such as spill pads, pillows, socks, and mats) used to recover liquids through the mechanisms of absorption, adsorption or both. Materials include clay, vermiculite, diatomaceous earth, and man-made materials. Used to isolate and contain small drips or leaks until the source of the leak is repaired. Commonly used with material handling equipment, such as valves and pumps.

Spill diversion ponds and retention ponds – Designed for long-term or permanent containment of storm water, but also capable of capturing and holding oil or runoff and preventing it from entering surface water bodies.

Drip pans – Used to isolate and contain small drips or leaks until the source of the leak is repaired. Drip pans are commonly used with product dispensing containers (usually drums), when uncoupling hoses during bulk transfer operations and for pumps, valves and fittings.

Sumps and collection systems – A permanent pit or reservoir and its associated troughs/trenches that collect oil.

[Example methods of secondary containment listed in 40 CFR Part 112.7\(c\)](#)

HSSE safety share

Human factors – Cold



The human body has an amazing capacity to adapt to the environment. As the temperature starts to decrease during fall, an acclimation process occurs preparing our bodies for the cold winter.

Humans have two general types of responses to cold: (1) vasomotor responses reduce dry heat loss to the environment, (2) Metabolic responses act to replace heat lost to the environment.

The **vasomotor response** causes our blood vessels to constrict. This reaction is not limited to the hands but is widespread throughout the peripheral shell. The decrease in peripheral blood flow **reduces convective heat transfer** between the body's core and shell and increases insulation.

On the other hand, during the **metabolic response**, **the body starts burning fuel** to produce its own heat. Muscle is generally considered the source of the increased metabolic heat production. Besides generating external force, muscle contractions also result in the liberation of considerable heat.

As a human factor, **cold weather can have an effect on our movements** due to muscle contractions in the form of shivering and the reduction of blood flow to our skin and hands. This could **potentially cause errors** when operating

tools and equipment. As dexterity also gets affected, handling parts (especially small components) can be challenging. Likewise, bulky PPE may be necessary but can also get in the way.

As the entire body is trying to prevent the loss of heat and increasing internal temperature, the **brain slows down**. Critical thinking gets compromised and **judgment mistakes can often occur**.

For this reason, it is important that the job is carefully planned. As part of Situational Awareness, and WYE? **possible errors should be anticipated**. The crew should discuss before starting the job, what success looks like and what are the signs to look for when the cold weather could be affecting performance. One of the crew members can be designated to **observe for signs** and help the team refocus or **take a break** in a heated area.

Being familiar with Human Factors and how our body reacts to conditions can help us **be mindful** and **prevent incidents** by putting preventive measures in place.

HSSE safety share

Situational awareness – confidence to act



In the past, we have discussed how the three steps of situational awareness (observe/detect, interpret/understand and anticipate/forecast) are instrumental to be able to recognize the risk associated with a task and its surroundings. However, being situationally aware is no good if it does not affect our actions appropriately.

At any time during our detection, understanding and forecasting we have the choice to take action. Understanding the reasons why we don't typically feel comfortable acting can help us to overcome barriers and improve our confidence to speak up when conditions or behavior's look unsafe.

Why we might not feel confident to act:

- ▶ We might see others not acting and think they know something we don't.
- ▶ We might see more experienced people around us who aren't doing anything.
- ▶ We might assume we have misread the situation.
- ▶ We might worry about alienating a co-worker by calling attention to an unsafe situation.
- ▶ We might think we don't have authority or support.
- ▶ We might feel that if we've mistaken the situation it could get us into trouble.
- ▶ We might think it could make the situation worse.

Whatever the reason, not voicing a concern can allow an unsafe condition or behavior to continue, potentially turning a situation into an incident.

Always speak-up about what worries you.

Not all reasons for stopping or slowing are obvious to everyone. Finally, assume others haven't seen what you've seen, know what you know or understand it as you do.

Good catch/near miss highlights

What makes a great good catch/near miss?

- ▶ **See something** – observe a potentially unsafe condition
- ▶ **Say something** – report the near miss to the appropriate parties
- ▶ **Do something** – apply corrective action or follow-up

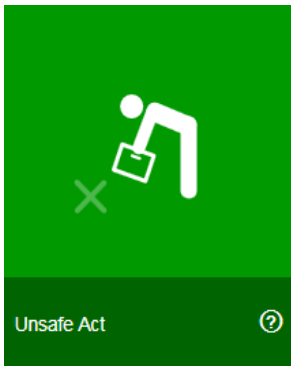


Making an intervention to prevent an unsafe act.

DRA installation – tank filling

Good catch: During installation of DRA tank, I observed the actions related to filling the tank. We discussed actions on the filling process and what should happen with the incidental product that drips into a bucket (secondary containment) upon disconnecting the hose from the tank. Management of proper disposal would be for continued use of the same bucket for filling activities. Once residual product hardens and the bucket is no longer able to contain refilling residue, the bucket is to be disposed of by Heritage.

Discussion: What types of contingency plan discussions do you have with your team to prepare for situations that may not go as planned? Do you feel comfortable fulfilling your actions in these plans? When was the last time you had to respond to a spill or other similar situation on site? What actions did you fulfill as part of the response?

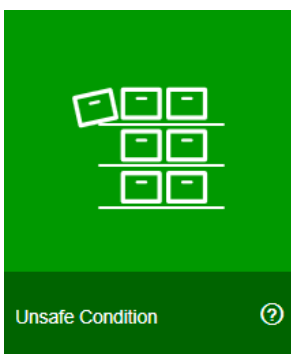


An observed behavior that differs from the expected safe way of working.

Exclusion zone too small

Good catch: While venting tank 43004 – with winds coming out of the West – the vent fumes were blowing toward the main ramp entrance to the dike area. The exclusion zone had to be expanded until the vapors dissipated. Employees working within the exclusion zone were required to wear full face mask with cartridges at all times until exiting the zone. A discussion of an alternate entry method, upwind of the vapors, was held.

Discussion: When was the last time you saw an unsafe act on site and acted to correct it? What actions did you take? Do you constantly evaluate your workplace to ensure changes in weather and other conditions are noted and appropriate actions are taken to remain safe? Do you feel comfortable stopping work or implementing a revised plan when conditions change?



A condition of equipment, procedure, process operations or working environment that could either result in an incident or make an incident more likely and/or severe.

Working with mask and safety glasses

Good catch: While working, I noticed glasses would fog up and workers could not see. The work force would look over their glasses to see or pull their mask under the nose. This situation corrected itself for that day because the job was shut down due to the wind picking up around the same time that this condition was noticed. The Team Leader and Safety Coordinator were notified and are looking into the condition for the future.

Discussion: When was the last time you observed an unsafe condition on site? What did you do to correct the unsafe condition? Do you feel comfortable speaking up when you see an unsafe condition? How do you ensure proper visibility while working when safety glasses or other PPE are required?

Have a **Good Catch** or **What Good Looks Like** event you want to share?
Report either to the appropriate BP site contact.

Contractor management

More information and resources

Contractor safety forum

We thank everyone for taking part in the bp Contractor Safety Forum on Oct. 29. It was a great opportunity to meet all of you, although virtually, and share our latest lessons learned and policy updates and to listen to your presentations as well. We had very positive feedback from many contractors. If you would like to receive any specific presentations from the forum, please email Anar Khalilov (anar.khalilov@bp.com).

Contractor management policy update

The contractor management policy has been updated and communicated to all contractors via the bulletin board in ISNetwork and also uploaded to the bp contractor information website (linked below), which all contractors are able to access.

Contractor grading

The overall statistics of contractor grading is below:

A grade – 71

B grade – 122

C grade – 20

D grade – 27

Key bp contacts

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Contractor information website

The USPL contractor information website contains important information to assist you in working safely with USPL, including HSSE policies, forms, toolkits, bp-specific programs, links to industry websites and OQ training information. Access the website at:

https://www.bp.com/en_us/united-states/home/products-and-services/pipelines/contractor-information.html